AMENDMENTS TO THE SPECIFICATION:

Amend the specification as follows:

Page 1, after the title, amend the heading as follows:

BACKGROUND OF THE INVENTION

~~TECHNICAL~~ FIELD OF THE INVENTION

Page 1, after the first full paragraph, amend the heading to read as follows:

~~BACKGROUND OF THE INVENTION~~ DESCRIPTION OF THE RELATED ART

Paragraph starting at line 9, on page 1, has been amended as indicated below:

A flow rate of a mass of refrigerant which circulates through a refrigeration cycle apparatus is [[all]] the same in [[any]] all points in a refrigeration cycle. If a suction density of refrigerant passing through a compressor is defined as DC and a suction density of refrigerant passing through an expander is defined as DE, the DE/DC (density ratio) is always constant.

Paragraph starting at line 15, on page 1, has been amended as indicated below:

In recent years, attention is focused on a refrigeration cycle apparatus using, as a refrigerant, carbon dioxide (C02, hereinafter) in which the ozone ~~destroy~~ destruction coefficient is zero and global warming coefficient is extremely ~~smaller~~ less than that for Freon. The $C0_2$ refrigerant has a low critical temperature as low as 31.06°C. When a temperature higher than this temperature is

utilized, a high pressure side (outlet of the compressor - gas cooler - inlet of pressure reducing device) of the refrigeration cycle apparatus is brought into a supercritical state in which C02 refrigerant is not condensed, and there is a feature that operation efficiency of the refrigeration cycle apparatus is deteriorated as compared with a conventional refrigerant. Therefore, it is important for the refrigeration cycle apparatus using $C0_2$ refrigerant to maintain optimal COP, and if a temperature of the refrigerant is changed, it is necessary that a pressure is adjusted to a refrigerant pressure which is optimal to the refrigerant temperature.

Paragraph starting at line 6, on page 2, has been amended as indicated below:

However, when the refrigeration cycle apparatus is provided with the expander and power ~~recover~~ recovered by the expander is used as a portion of a driving force of the compressor, the number of ~~rotation~~ rotations of the expander and the number of ~~rotation~~ rotations of the compressor must be the same, and it is difficult to maintain the optimal COP when the operation condition is changed under constraint that the density ratio is constant.

Paragraph starting at line 23, on page 3, has been amended as indicated below:

However, there is a problem that as a difference between a volume flow rate of fluid which flows into the expander and an optimal flow rate in terms of design is increased, an amount of refrigerant flowing through the bypass pipe is increased and as a result, power which could have been recovered ~~can not~~ cannot be sufficiently recovered.

Paragraph starting at line 3, on page 3, has been amended as indicated below:

If the power ~~recover~~ recovered by the expander is used as a driving force for an auxiliary compressor which is different from the compressor, it is possible to eliminate the constraint that the number of ~~rotation~~ rotations of the expander and the number of ~~rotation~~ rotations of the compressor must be the same. However, even if the auxiliary compressor is driven by the expander, the constraint that the density ratio is constant [[is]] still ~~remained~~ remains, and it is still necessary to control the amount of refrigerant which flows into the expander.

Paragraph starting at line 12, on page 3, has been amended as indicated below:

Thereupon, it is an object of the present invention to reduce the constraint that the density ratio is constant as small as possible, and to obtain high power ~~recovering~~ recovery effect in a wide operation range.

Paragraph starting at line 17, on page 3, has been amended as indicated below:

A first aspect of the present invention provides a refrigeration cycle apparatus using carbon dioxide as a refrigerant and having a compressor, an outdoor heat exchanger, an expander, an indoor heat exchanger and an auxiliary compressor, in which the auxiliary compressor is driven by power ~~recover~~ recovered by the expander, when refrigerant flows using the indoor heat exchanger as an evaporator, a discharge side of the auxiliary compressor becomes a suction side of the compressor,

and when refrigerant flows using the indoor heat exchanger as a gas cooler, a discharge side of the compressor becomes a suction side of the auxiliary compressor.

Paragraph starting at line 3, on page 4, has been amended as indicated below:

According to the first aspect of the present invention, a refrigeration cycle apparatus is structured such that when refrigerant flows while using an indoor heat exchanger as an evaporator, a discharge side of an auxiliary compressor is a suction side of a compressor, and the refrigerant which is sucked into the compressor by the auxiliary compressor is supercharged, and when the refrigerant flows while using the indoor heat exchanger as a gas cooler, the discharge side of the compressor is a suction side of the auxiliary compressor, and the refrigerant which is discharged from the compressor is further super-pressurized, thereby reducing the difference in the density ratio by the refrigerant flow (operation aspect) to achieve [[the]] high efficiency.

Paragraph starting at line 16, on page 4, has been amended as indicated below:

The density ratio of the aspect will be explained using Fig. 3. Here, the refrigerant flow in which the indoor heat exchanger is used as the evaporator is called a cooling operation aspect, the refrigerant flow in which the indoor heat exchanger is used as the gas cooler is called a heating operation aspect, and a case in which the discharge side of the auxiliary compressor is the suction

side of the compressor is called a supercharger aspect, and a case in which the discharge side of the compressor is the suction side of the auxiliary compressor is called [[an]] <u>a</u> super-pressurizing aspect.